



Met Office

Status of the Met Ocean Domain WG

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Third Workshop on Use of OGC / GIS standards in Meteorology

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Some OGC Background

Some OGC Background

>400 members from 1994

Global – originally USA bias, now more European members

Non-profit, Voluntary, Consensus, standards body

Open geo-spatial interoperability standards

Fast moving

Fast track to ISO, other organisations (OASIS, WMO, etc)

Interoperability Experiment cycles

Different standards:

- Interfaces
- Encodings
- Abstract specifications (reference models)



Challenges for OGC standards in Meteorology



- Long history of interoperability at human/paper level
- Spatial & Temporal, 2D, 3D, 4+D, constantly changing
- Not Mbytes, but GB, TB and PetaBytes.
- Irregular time intervals
- Timescales: hours,..., seasons,..., centuries, + & -
- Multiple Time attributes
- 'Regular' grids are not always
- Continual change of coordinate systems & projecting
- Eulerian versus Lagrangian viewpoints
- Vertical coordinates
- Cross-sections, height-time diagrams, T/ ϕ s, etc
- Ensembles: probabilistic distributions, multiple realities
- Significant 'Objects', features of interest



History of 1st Workshop



2007 Concerns over technology and architectures

ECMWF 11th Workshop on Operational Meteorology

Recommended OGC / GIS standards be investigated

Recommended a dedicated Workshop

2008

First Workshop on Use of OGC and GIS Standards in Meteorology

At ECMWF, Reading, November 2008. Recommended:

Join OGC: **KNMI, FMI, MF, UKMO, ECMWF, NOAA, DWD...**

Establish Met (Ocean) Domain Working Group: **2009-03 (-09)**

Establish MoU between WMO and OGC: **2009-11**

Encompasses all OGC (Met Ocean, Hydro, etc)

Encompasses all WMO (CBS, CIMO, CCI, CAeM, CAgM, CAS, JCOMM)



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1st Workshop on OGC/GIS Standards in Meteorology



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- Workshop on the Use of GIS/OGC Standards in Meteorology
- 24-26th November 2008

- Organised by:



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- Aims:

- Review the use of OGC (Open Geospatial Consortium) standards in geo-sciences in Europe and worldwide
- Promote collaboration between meteorological services in order to define a set of common standards that will enhance interoperability

“... establishment of further collaboration within the meteorological community and the setting up of test-beds to promote interoperability of OGC compliant web services for meteorological data and visualisation ...”

Roadmap for Collaboration

Use of GML & Coverages

Use of the OGC WMS

Security and Access Control

http://www.ecmwf.int/newsevents/meetings/workshops/2008/OGC_workshop/index.html

Organise another Workshop



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1st Workshop Outcomes



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Roadmap for Collaboration

- Establish Meteorology DWG
- Collaboration tools, like website
- 6 monthly Interoperability Experiments
- Validate standards and best practices

Use of GML & Coverages

- Develop core models, use case driven,
- Validate, establish governance, registries

Use of the OGC WMS

- Develop meteorological profile

Security and Access Control

- Delegate to proxies
- Use lower level SSL/VPN IP filtering
- Role based authentication
- Establish Virtual Organisations



Some Met Ocean DWG History



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Meteorology Domain WG

- OGC has 'vertical' Standards Working Groups (SWGs)
- 'Horizontal', communities of interest, Domain Working Groups
- Meteorology DWG established Mar 2009 at OGC Technical Conference, Athens
- Hydrology DWG established at same time
- Environmental Science DWG to have overseeing, coordinating role
- Debate about oceanography, climatology, etc.



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Met Ocean Domain WG

- The Meteorology DWG converted itself in Sept 2009 at OGC Technical Conference, Darmstadt
- MoU with WMO signed November 2009
- Second Workshop on the use of GIS/OGC standards in meteorology:

Toulouse, 23-25 November 2009

Established second major work theme: conceptual modelling

Third workshop planned Exeter 2010, observations theme



2nd Workshop: Actions



- 2009 Dec: Set-up calendar on Wiki
- 2010 Jan: Write IE proposal
 - Look at Hydrology & Oceans & GALEON IEs
 - Realistic (operational) data for load test
- 2010 Mar: Start IE (Met Ocean DWG)
 - Engage stakeholders on IE
 - Inspire/JRC, tool providers
- 2010 May/Jun: EGOWS
 - Live interoperability demonstration
- 2010 Sep: CCIP
 - Live interoperability demonstration
- 2010 Nov: 3rd OGC Workshop
 - Present results of IE
 - Observations
 - Ontologies?

WMO-OGC Formal meeting

2010-02, Geneva

- WMO Secretariat: Information Systems Branch
- WMO Secretariat: Climate and Water Department
- WMO Commission for Basic Systems
- OGC Met Ocean DWG co-chairs
- OGC Hydro DWG co-chairs
- OGC Staff



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WMO-OGC Outcomes



Key WMO role-players identified by WMO:

- WMO Secretariat Information Systems Branch
- Experts representing the following Technical Commissions to liaise with OGC Met Ocean and Hydrology DWGs
 - Commission for Basic Systems (CBS)
 - Commission for Instruments and Methods of Observation (CI MO)
 - Commission for Climatology (CCI)
 - Commission for Hydrology (CHy)
 - Joint WMO-IOC Commission for Oceanography and Marine Meteorology (JCOMM)
- One CBS representative for Coordination of WMO and DWG activities
- Establishment of a WMO-OGC coordination team consisting of WMO and OGC nominated experts, co-chairs of DWGs (Proposal to be confirmed by OGC)

Addressing WMO requirements

- OGC-WMO coordination team to ensure that the requirements expressed by WMO Programmes are appropriately acknowledged within DWG activities

Reporting structures

- Reporting between OGC and WMO through OGC-WMO coordination team
- WMO lead Technical Commission should be CBS
- WMO internal reporting through nominated coordinator and experts

Synchronisation of DWG activities

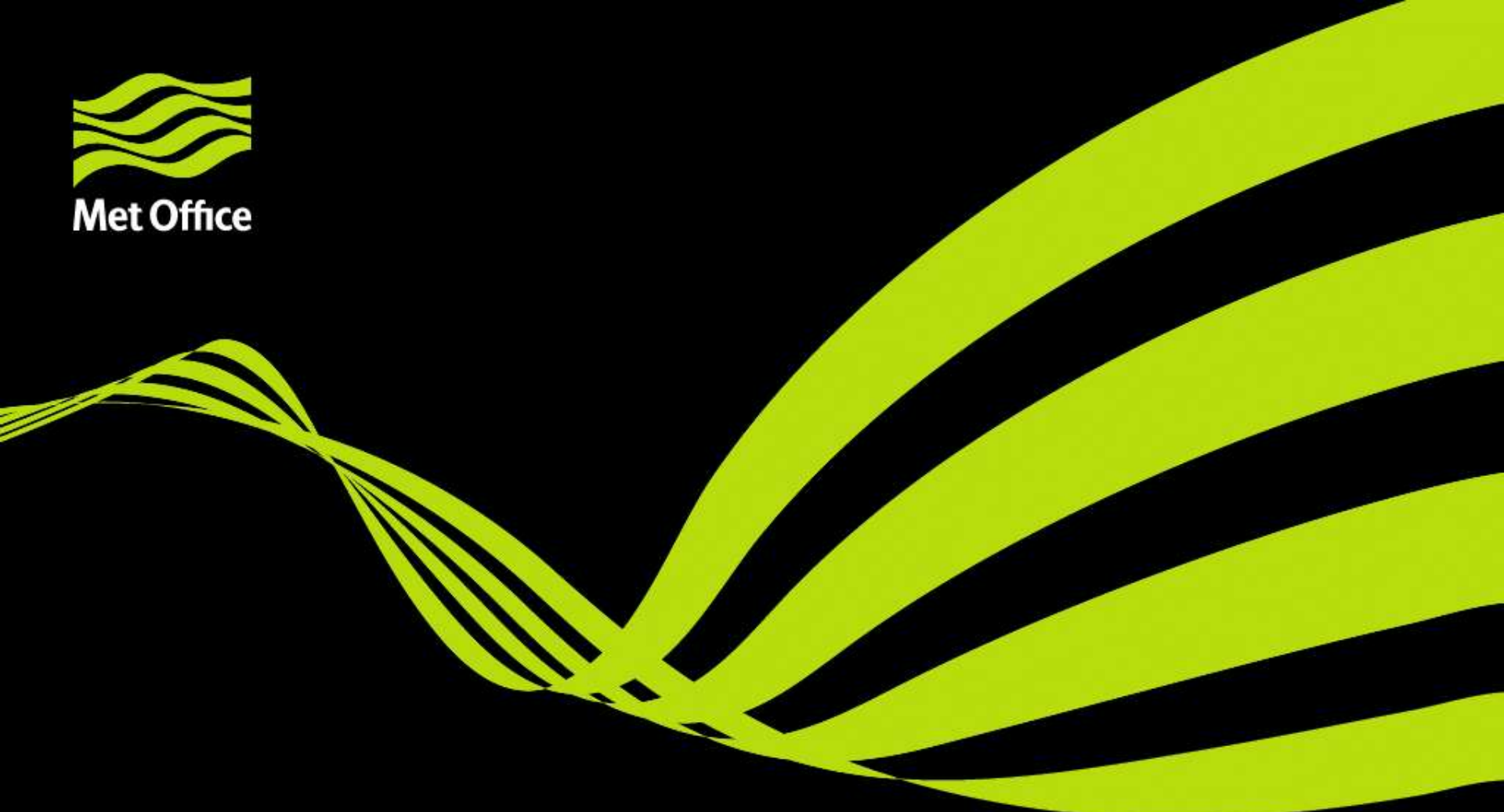
- Joint meetings
- Identification of areas of cooperation (e.g. joint IEs)



MODWG: Where are we now?

Where are we?

- Open Wiki, open mailing list, community established
- Options for WMS profile identified
- Conceptual modelling active
- Met Ocean DWG and Hydro DWG collaboration starting
- Météo-France participation in OGC IE Test bed
- Contributing to 2D vs 4D debate in OGC
- Realised importance of O&M, Sensor Web
- Clearer view of importance of other standards
- Timescales: Doppler red-shift / shift to right



Questions



Spare slides, extra info



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OGC TC MountainView Roadmap: Exemplar IEs



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MetOcean

- profile for WMS & WMTS
- OWS Context
- OWS Common
- Time & multi-variable (OWS Common)
- Application specific meta data
- SLD (styling)
- Notification & events
- Catalogue infrastructure & synchronisation
 - Look at Inspire
- Documentation of failures & success of common tools

Interoperability of data models & encodings

O&M & SWE including WMO WIGOS

Hydrology IE

Resource: GALEON IE



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vGIS ITT Open source



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Geonetwork

- Licence compatibility with Open SSO licence
- Use with or without modifications
- Learning curve and cost integration

Open SSO

- Licence
- Learning curve and cost integration

Effort for GEMS/SMART

Interfaces definition

- Middleware with standards based interfaces
- Possibility to add different software

Why Me?

- Member of VGISC ITT Drafting Teams
- WMO Regional Association VI Co-Rapporteur for Information Systems & Services
 - (with Leonid Bezruk, Russia)
- WMO Focal Point for RTH Exeter
- Been around a long time
 - *(I am partly to blame for GRIB, BUFR & CREX)*